

ADDENDUM TO THE DRAFT ECONOMIC IMPACT ANALYSIS OF PROPOSED CRITICAL HABITAT FOR THE KAUA‘I PLANTS

1. INTRODUCTION

In January 2002, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat under the Endangered Species Act of 1973, as amended (the Act), for threatened and endangered plants on Kaua‘i and Ni‘ihau (the plants). This proposal encompassed approximately 99,206 acres of land on the island of Kaua‘i and 697 acres of land on the island of Ni‘ihau in the State of Hawai‘i. Because the Act requires an economic analysis of the critical habitat designation, the Service released a “Draft Economic Analysis of Proposed Critical Habitat Designations for Threatened and Endangered Plants on Kaua‘i and Ni‘ihau, Hawai‘i” (hereafter the DEA) for public review and comment in April 2002.¹

The primary purpose of this Addendum is to update the DEA. As such, the Addendum revisits the assumptions and analytic conclusions presented in the DEA in light of new information obtained since the DEA was published. It also addresses issues raised in public comments on the DEA. The DEA as revised and updated by this Addendum constitutes the final economic analysis on this proposal.

2. EXCLUDED AND REDUCED UNITS

As a result of new information and for biological reasons other than economic impacts, the Service has indicated that it will redraw the boundaries to reduce the acreage in 16 units (or 19 units and sub-units, referred to throughout this report as “units”) and remove one unit in the final critical habitat designation for the plants. The total acreage will be reduced from 99,903 acres to 52,905 acres, or a decrease of 46,998 acres (47 percent) (Memorandum to the Service, Washington Office, from the Service, Honolulu Field Office, November 6, 2002). Additional acres may be removed in the final rule as a result of the economic impacts presented in the DEA and in the Addendum or other impacts considered pursuant to section 4(b)(2) of the Act. As such, references to “critical habitat” throughout this report refer to the 52,905 acres, unless otherwise noted. Table Add-1 presents the proposed rule acreage, the acreage discussed in this Addendum, and the change between the two for each of the critical habitat units.

¹ Copies of the DEA are available from the Pacific Islands Fish and Wildlife Office, U.S. Fish and Wildlife Service, Honolulu, Hawai‘i.

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Placeholder for Table Add-1

Add-2

Table Add-1 also presents the decrease in land ownership between the proposed rule critical habitat and the critical habitat as considered in this Addendum. Land owned by the Federal government will be reduced by 360 acres to 177 acres, and land owned by the State will be reduced by 30,078 acres to 36,627 acres. The two acres of the land owned by Kaua'i County will be removed. Land owned by major private owners will be reduced by 16,477 acres to 15,782 acres, while land owned by minor private owners will be reduced by 81 acres to 299 acres. Finally, seven acres of road will be removed to leave 13 acres within the critical habitat boundaries.

The change in the number of acres in each of the State land use districts is also presented in Table Add-1. The land in the Conservation District will be reduced by 45,948 acres to 52,488 acres (comprising 99 percent of the remaining critical habitat acreage); the land in the Agricultural District will be reduced by 1,029 acres to 407 acres (less than one percent of the critical habitat acreage); and the land in the Urban District will be reduced by 24 acres to 12 acres (less than one percent of the critical habitat acreage).

Unit specific changes, features removed, and changes in the managed areas are discussed where applicable in each section below.

The preamble to the final rule will explain any revisions to the proposed critical habitat designation. Henceforth, the proposed designation addressed in this addendum refers to the designation with the above modifications.

3. DIRECT COSTS

As noted above, the Service intends to remove almost 47,000 acres from the proposed critical habitat designation. These changes will affect some of the direct costs estimated in the DEA. As such, this section revisits the costs affected and derives new costs according to the modifications. The DEA costs, the revised Addendum costs, and an explanation for the changes are presented in Table Add-2 at the end of the Addendum.

3.a. Ranching Operations

Chapter VI, section 3.e. of the DEA presents estimates of the costs associated with a potential future reinitiation of a consultation that took place on Kipu Kai Ranch. The Service indicates that all of the land in the Agricultural District in the Kipu Kai Ranch (Units D2 and E) will be removed from the final designation for biological reasons. The portions of the Kipu Kai Ranch that will remain in the designation are in the Conservation District and are too steep to support ranching operations. Therefore, all costs estimated for this project in the DEA are no longer expected.

3.b. U.S. Military Activities

Chapter VI, section 3.m. of the DEA indicates that portions of the Pacific Missile Range Facility (PMRF) are included in Units H1, H2, and H3. PMRF is the world's largest instrumented, multi-environment missile range capable of supporting surface, subsurface, air and space operations. PMRF is used primarily for training military personnel and for testing missile systems and other systems under design.

The DEA indicates that the Navy will conduct two programmatic consultations over the next 10 years and presents cost estimates for the possible project modifications that may result from these consultations. However, the Service indicates that portions of PMRF will be removed from the final

designation for biological reasons. Since the costs of certain project modifications are associated with specific areas on PMRF, removing these areas from critical habitat will reduce these costs. A summary of the areas that will be removed from critical habitat and the change in the project modification costs is presented below:

— Small Arms Firing Range

The Navy is planning to disturb approximately five acres of vegetation during a lead-cleaning project at the existing small arms firing range. The DEA states that the Navy may agree to revegetate the disturbed areas with native plants as a result of a section 7 consultation, and that the cost of the project modification is approximately \$10,000. The Service indicates that this area will be removed from critical habitat for biological reasons (i.e., it lacks the primary constituent elements). Therefore, the lead-cleaning project will not be included in future consultations, and the Navy will not incur the re-vegetation costs.

— Construction Debris Stockpile Expansion

The Navy is planning to expand the size of the existing construction debris stockpile. The DEA states that the Navy may agree to locate the expanded stockpile to some area just outside of the proposed critical habitat. In order to access this site, the Navy would have to build a road that could cost between \$500,000 to \$1 million. The Service indicates that the area around the existing stockpile and access road will be removed from critical habitat for biological reasons. As such, the Navy will be able to expand the size of the existing stockpile and will not have to build a new road or incur the associated costs.

— Amphibious Assault Training Area

The Navy conducts ongoing training exercises near Majors Bay. These include landing exercises with amphibious assault vehicles and staging exercises on an area behind the beach. The DEA states that the Navy may agree to locate the staging area just outside of the proposed critical habitat. In order to provide access to the site, the Navy would have to reinforce the portions of an existing road so that the amphibious vehicles could cross and clear the vegetation from the new staging area at an estimated cost of \$270,000 to \$275,000. The Service indicates that the landing beach and the existing staging area will be removed from critical habitat for biological reasons. As such, the Navy will not incur the costs associated with clearing and providing access to a new staging area.

— New Low-Frequency Antenna Sites

The U.S. Department of Commerce National Institute of Standards (NIST) plans to build a new low-frequency antenna in the proposed critical habitat. The DEA states that NIST may agree to identify a new site outside of the proposed critical habitat and negotiate with the Navy for its use. NIST indicated that the cost to do so could be significant. The Service indicates that the proposed antenna site will be removed from critical habitat for biological reasons. As such, NIST will not incur the costs associated with identifying a new site and negotiating with the Navy.

Certain on-going military activities may still affect the areas of critical habitat that do have the primary constituent elements essential for the conservation of the plant species. Based on the proposed designation, the DEA identified and estimated costs for potential effects to military activities. However, such effects from the final designation would be expected to be substantially less based on the reduced size of the designation. Furthermore, the Service conducted several meetings with the Navy to discuss potential impacts to discuss training concerns. The Service was able to revise critical habitat to address all of the specific logistical concerns identified by the Navy, while also providing for the conservation needs of the species.² As a result, the indirect impacts on Navy operations in the area remaining in the designation are anticipated to be minor. Consultations with the Navy to date have been informal and, in nearly all cases, the Service has concurred with the Navy's conclusion that the plants and/or plant habitat would not be adversely impacted by Navy activities.

4. INDIRECT COSTS

4.a. Management of Game Mammals and Loss of Hunting Lands

Chapter VI, section 4.b. of the DEA analyzes indirect impacts on hunting conditioned on a change in game management. Assuming, for the sake of illustration, that the State Department of Land and Natural Resources (DLNR) builds fences to exclude game ungulates from the proposed critical habitat units within State-managed hunting units, the DEA analyzes the impacts this may have on hunting. However, the Service indicates it will remove portions of the State-managed hunting units from the final critical habitat for biological reasons. This will result in a decrease in the acreage of critical habitat that overlaps with the hunting units from approximately 63,330 acres to 34,310 acres. In addition, data from the Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation has become available since the publication of the DEA. As such, the following are the revised estimates of impacts on hunting.

4.a.(1) Economic Activity Associated with Hunting on Kaua'i

Appendix VI-A, section 3 of the DEA provides an estimate of the economic activity associated with hunting on Kaua'i. As noted above, since the publication of the DEA, new information has become available. Using this new information, the 2001 estimated economic activity supported by just game-mammal hunting on Kaua'i amounted to about \$2.2 million in direct sales, \$3.8 million in total direct and indirect sales, 65 jobs, and \$1.3 million in income. Appendix VI-A of the DEA provides more information on the estimate of economic activity associated with hunting on Kaua'i.

4.a.(2) Economic Activity Associated with Hunting in Critical Habitat

If ungulates are removed from critical habitat, approximately 34,310 acres (i.e., 27 percent of State-managed hunting units on Kaua'i) will be eliminated from available hunting areas. If about half of those who hunt game mammals on the affected lands were to give up hunting, then hunting activity on Kaua'i could drop by about 13.5 percent (half of 27 percent). The other half of those who hunt in the affected areas might switch to other hunting areas or to hunting game birds.

² E-mail from Field Supervisor, U.S. Fish and Wildlife Service, Pacific Island Office to Chief, U.S. Fish and Wildlife Service, Division of Conservation and Classification, January 29, 2003.

The drop in hunting activity translates into a decrease in annual economic activity related to hunting on Kaua'i of about \$297,000 in direct sales (13.5 percent of \$2.2 million); \$513,000 in total direct and indirect sales (13.5 percent of \$3.8 million); nine jobs (13.5 percent of 65 jobs); and \$176,000 in income (13.5 percent of \$1.3 million). However, the decrease in expenditures by the displaced hunters would probably be spent on other recreational activities, goods and services, so these figures are likely to overstate the loss in economic activity.

One commenter (see the comment on public hunting below) mentioned that a reduction in hunting activity could result in the State losing revenues that it uses for game and area management services if sales of hunting licenses decreased. Based on the total hunting licenses issued on Kaua'i in 1998 (2,061), the price of a hunting license (\$20), and the potential decrease in hunting activity (13.5 percent), the total loss in hunting license revenue would equal approximately \$5,560 per year (DLNR, 2002). However, expenditures on hunting licenses are already included in the calculation of the direct sales associated with hunting activity mentioned above.

4.a.(3) Value of Hunting to Hunters on Kaua'i

Appendix VI-A, section 4 of the DEA provides estimates of the value of hunting to hunters on Kaua'i. As noted above, since the publication of the DEA, new information has become available. Using this new information, the Statewide value of all hunting for 2001 is estimated at \$7.9 million, based on (1) the assumption that hunters value their experience at \$25 per day; and (2) they hunted a total of 316,000 hunter-days that year. Based on the number of trips spent hunting game mammals (approximately 70 percent) and the number of hunters on Kaua'i (approximately 20.5 percent of the Statewide total), the value of just game hunting amounted to about \$1.1 million for Kaua'i (\$7.9 million x 70 percent x 20.5 percent). These figures on the value of game hunting should be interpreted as order-of-magnitude estimates, not precise estimates. Appendix VI-A of the DEA includes additional information on the value of hunting to hunters.

4.a.(4) Value of Hunting to Hunters in Critical Habitat

In addition to the change in economic activity discussed above, a reduction in hunting activity in critical habitat would also result in a loss in value or benefit to hunters (consumers' surplus). Under the given assumptions, this loss is estimated at \$148,500 annually (13.5 percent of the current \$1.1 million in surplus value). But partially offsetting this loss to hunters would be benefits derived from recreational activities that replace game mammal hunting.

4.b. Military Activities

The Service indicates it will remove certain areas of PMRF from the final designation, including certain existing improvements and the training area at Majors Bay. In addition, the Service conducted several meetings with the Navy to discuss potential impacts to discuss training concerns. The Service was able to revise critical habitat to address all of the specific logistical concerns identified by the Navy, while also providing for the conservation needs of the species.³ As a result, the indirect impacts on Navy operations in the area remaining in the designation are anticipated to be minor.

³ E-mail from Field Supervisor, U.S. Fish and Wildlife Service, Pacific Island Office to Chief, U.S. Fish and Wildlife Service, Division of Conservation and Classification, January 29, 2003.

4.c. Conservation Management

Chapter VI, section 4.d. of the DEA discusses the concern that some private landowners will be required to alter the management of their lands that fall within critical habitat to assure the survival and conservation of the listed species. While there is no existing obligation to proactively manage lands to control threats, there is an undetermined probability that a State or Federal court could mandate conservation management.

4.c.(1) Potential Future Requirements: Endangered Species Act

As discussed in the DEA, even though there is no direct requirement under Federal or State law to proactively manage lands to protect listed species and their habitats, some landowners speculate that, pursuant to litigation, a Federal or State court could mandate the cessation of existing activities and the institution of conservation management on privately owned critical habitat. Specifically, landowners fear the success of an argument similar to that used successfully in Federal Court to order the eradication of sheep and goats on Mauna Kea to protect the critical habitat of the endangered *palila* bird. (*Palila vs. Hawaii Department of Land and Natural Resources*). The *Palila* case was based upon section 9(a)(1) of the Act and found that modifying habitat could amount to a *take* of the species.

Under Federal law, the prohibition on *taking* in the Act applies to fish and wildlife, but not to plants. Thus, it is arguable that the *Palila* decision is inapplicable to listed plants because that decision specifically addressed taking of wildlife, while the Act does not prohibit the “take” of plants in this context.

Still, an argument could be made that the reasoning underlying the *Palila* decision also applies to section 9(a)(2). Section 9(a)(2) of the Act makes it unlawful to “remove, cut, dig up, or damage or destroy any such (listed plant) species on any [land outside Federal jurisdiction] in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.” Despite the presence of State law in Hawai‘i protecting endangered or threatened plants, the prohibitions in section 9(a)(2) (against removing, cutting, digging up, damaging or destroying listed plants) are arguably narrower than the broader concept of *take* that was at issue in the *Palila* case. In addition to being limited to the removal, cutting, digging up, damage and destruction of a listed plant, a violation of section 9(a)(2) requires knowledge that the particular action violates State law. While a court could interpret this section broadly to prevent modification to critical habitat or require institution of conservation management activities, it is difficult to imagine a situation where an activity removes, cuts, digs up, damages or destroys a listed species in an area where the species is not present (i.e. an *unoccupied* area). Thus, the likelihood of this result is estimated to be low for purposes of this economic analysis.

In addition, it should be noted that an attempt to require conservation management in a particular area through litigation based on section 9(a)(2) could be brought with or without the designation of critical habitat. Any conservation management practices required as a result of such litigation would be section 9 costs, rather than section 7 costs. However, the boundaries of critical habitat could be used as a practical definition of the area that requires conservation management. The designation of critical habitat may expand or refine the area that would be subject to conservation management compared to a baseline scenario with no critical habitat designation. If this is the case, some undetermined percentage of the costs of conservation management would be attributable to critical habitat.

4.c.(2) Potential Future Requirements: Interplay with State Law

Landowners also fear that conservation management may be imposed based on the interplay between provisions of State law and the designation of critical habitat. Under State law, the *taking* of any native threatened or endangered plant is prohibited. Landowners fear application of the Federal definition of *take*, as applied in the *Palila* case, to the State Act. Moreover, because there is no critical habitat under State law, landowners fear that Federal designation of critical habitat would create the opportunity for this argument to be made under State law. In short, landowners fear that a court could find that an action that degrades Federal critical habitat constitutes an illegal *taking* under State law. For example, allowing ungulates, including cattle, to roam free could be viewed as an activity that degrades a critical habitat and therefore amounts to a *taking* under State law of a listed species.

The State law prohibiting the *taking* of endangered or threatened plants is functionally the same as the Federal *take* provision for wildlife. Specifically, State law defines *take* as “to cut, collect, uproot, destroy, injure or possess endangered or threatened species of aquatic life of land plants.” The word *harm*, upon which the *Palila* case relied, is not included in the State definition of *take* for plants.

Based on the above, while an argument is possible that the interplay between the designation of critical habitat and State law could mandate conservation management, the likelihood of this result is estimated to be low for purposes of this economic analysis. In addition, as discussed above, such an action could be brought without designation of critical habitat.

4.c.(3) Costs of Conservation Management Activities

In order to illustrate the potential costs if a State or Federal court did mandate conservation management, the DEA provides an estimate of the costs of conservation management based on the number of acres of critical habitat in the mountains and annual management costs per acre. As mentioned in the DEA, historical conservation management costs range from \$30 to \$80 per acre per year, including fencing costs. Most of the applicable historical management costs cluster around \$30 per acre, while the high figure of \$80 per acre applies to projects such as a well-funded National Wildlife Refuge project. If conservation practices were mandated, it is assumed that a reluctant landowner would implement the minimum level of land management, not the maximum level. As such, the figure of \$30 per acre per year is used to calculate the illustrative cost of conservation management for critical habitat. Based on the number of acres in the designation presented in Table Add-1, this cost is \$1.8 million per year ($\$30 \times 52,905$).

4.d. Redistricting of Land by the State

Chapter VI, section 4.e. of the DEA discusses the concern that land in the Agricultural and Urban Districts in critical habitat will be redistricted into the Conservation District. The DEA presents an estimate of the economic costs of redistricting. These costs, which are presented in Table VI-3 of the DEA, include changes in property value, changes in annual rent associated with grazing, and a change in annual property taxes.

The DEA focuses on potential impacts of redistricting to the privately owned Agricultural land in Units E, N, and Ni‘ihau A, as well as the privately owned Urban land in Unit D1. The Service indicates that all of the privately owned Agricultural land in Units E and N, all of Unit D1, and approximately half of the Agricultural land on Ni‘ihau will be removed from the final designation of critical habitat. As such, approximately 357 acres on Ni‘ihau, 11 acres in Unit F, and 12 acres in

Units A1 and A2 will be the only other privately owned land remaining in the designation that is not already in the Conservation District.

The DEA states that as a result of redistricting, the land values on Ni‘ihau could drop by \$500 per acre. Since there will be 357 acres of land in critical habitat on Ni‘ihau, the total drop in property values could be \$178,500 ($357 * \500). If redistricting causes a reduction in the amount of grazing in critical habitat, the loss in economic activity would be small since grazing is a low-value, marginally profitable activity that typically generates land rents of less than \$10 per acre per year (based on information from landowners and ranchers).

As mentioned in the DEA, redistricting land to the Conservation District could also raise property taxes for private landowners. This results from the State policy to encourage agricultural by assessing land dedicated to agriculture at a lower than the market value to give a property tax break to farmers and ranchers. The DEA estimates that Agricultural land on Ni‘ihau is assessed at \$78 per acre, and taxed at \$4.05 per \$1,000 of assessed value. Conservation land on Ni‘ihau could be assessed at \$200 per acre, and taxed at \$8.60 per \$1,000 of assessed value. If all 357 acres of agricultural land on Ni‘ihau is redistricted to the Conservation District, the resulting increase in property taxes would be \$500 ($(357 * \$78 / \$1,000 * \$4.05) - (357 * \$200 / \$1,000 * \$8.60)$).

Most of the 11 acres of Agricultural land in Unit F is in a gulch and is owned and managed by the National Tropical Botanical Garden (NTBG). Redistricting this land to the Conservation District will not interfere with the use of the land. Approximately two acres of Unit F are privately owned. However, all of this land is in a gulch and it not useful for agricultural purposes. As such, the loss in property value as a result of redistricting would be small.

Approximately 12 acres in Units A1 and A2 are in the Urban District. However, all of this land is steep ocean cliffs with little or no economic value. Redistricting this land to the Conservation District would have little or no effect on the property values or potential uses.

4.e. State and County Development Approvals

Chapter VI, section 4.f. of the DEA discusses the concern that critical habitat will significantly affect State and county development approvals, even when there is no Federal involvement. The discussion focuses on a potential resort/residential project in Unit D1. The Service indicates this unit will be removed from the final designation for biological reasons. As such, the costs associated with State and county development approvals are expected to be minimal.

The DEA also mentions the possibility that certain projects and activities will require additional State and county environmental review as a result of critical habitat. The discussion focuses on Hawai‘i’s Environmental Impact Statement (EIS) Law, which states that, depending on the amount of environmental impact, certain projects will require the preparation of an Environmental Assessment (EA), or a more extensive EIS. There is a concern that any project that already requires an EA due to baseline environmental regulations will have to prepare a more expensive EIS if it were designated as critical habitat.

There is one project in the critical habitat designation that may require an EA, and may require an EIS due to critical habitat. This is the planned repair and improvement of the Koke‘e Ditch water systems mentioned in Chapter VI, section 3.i.(2) of the DEA. The cost of an EIS over and above the cost of an EA is estimated at \$25,000 to \$75,000 in the DEA. As such, the additional environmental review potentially attributable to critical habitat for one project is \$25,000 to \$75,000.

4.f. Reduced Property Values

Chapter VI, section 4.g. of the DEA discusses the concern that critical habitat will reduce property values. The discussion focuses on the privately owned Agricultural land in Units E, N, and Ni‘ihau A, as well as the privately owned Urban land in Unit D1. As noted above, the Service indicates that all of the privately owned Agricultural land in Units E and N, all of Unit D1, and approximately half of the Agricultural land on Ni‘ihau will be removed from the final designation of critical habitat. As such, the decrease in property value for the areas likely to remain in critical habitat (357 acres on Ni‘ihau) could approach roughly \$500 per acre, or a total impact approaching \$178,500.

5. COSTS TO SMALL ENTITIES

Chapter VI, section 5 of the DEA discusses the potential impacts on small entities. Since the publication of the DEA, the format for analyzing the impacts to small entities has changed to provide more detail on the entities impacted. In addition, certain entities discussed in the DEA are no longer impacted due to the changes the Service will make in the final critical habitat designation. The following is a revised assessment of the costs to small entities.

5.a. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA) (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

While SBREFA does not explicitly define either “substantial number” or “significant economic impact,” the U.S. Small Business Administration (SBA) and other Federal agencies have interpreted “substantial number” to mean 20 percent or more of the small entities in any industry, and “significant economic impact” to equal three percent or more of a business’s annual sales.

Federal courts and Congress have indicated that an RFA/SBREFA analysis should be limited to all impacts to entities directly subject to the requirements of the regulation (Service, 2002). As such, entities indirectly impacted by the plant listings and critical habitat and, therefore, not directly regulated by the listing or critical habitat designation are not considered in this section of the analysis.

5.b. Entities Potentially Impacted

The analysis in the DEA, as revised by the Addendum, is based on a review of all projects, activities, land uses and entities that may be directly regulated by the implementation of section 7 for the listed plants. Based on this review, the list below presents the projects, activities, and land uses that could be impacted by critical habitat (Table Add-2), and the entities associated with these impacts organized by type of activity:

- **Management of Game Hunting**
 - *Federal:* Service
 - *State:* DLNR
- **State Parks:** None
- **Botanical Gardens and Arboreta**
 - *Federal:* Service
 - *Non-profit:* NTBG
- **Conservation Projects**
 - *Federal:* Service
 - *County:* Kaua'i County Board of Water Supply
 - *Non-profit:* The Nature Conservancy Hawai'i (TNCH)
- **Ranching Operations:** None
- **Communication Facilities⁴**
 - *Federal:* Service, Navy
 - *County:* Kaua'i County Police Department
 - *Private:* Verizon Hawai'i Inc.
- **Navigational Aids:** None
- **Power Transmission Lines:** None
- **Hydropower Development:** None
- **Water Systems**
 - *Federal:* Service, U.S. Department of Agriculture (USDA)
 - *State:* Hawai'i Department of Agriculture (Hawai'i DOA)
- **Resort/Residential Development:** None
- **U.S. Military Activities**
 - *Federal:* Service, Navy
- **Ecotourism:** None
- **Natural Disasters**
 - *Federal:* Service, Federal Emergency Management Agency (FEMA)

5.c. Small Entities Potentially Impacted

⁴ There are no known communication facilities planned in critical habitat, so the potential entities affected are also not known. The entities listed include entities that have built communication facilities in critical habitat in the past, or are likely to build them in the future.

The RFA/SBREFA considers “small entities” to include small governments, small organizations, and small businesses (5 U.S.C. §601). The following discussion examines each entity potentially impacted from the list above to determine whether it would be considered “small” under the RFA/SBREFA.

5.c.(1) Federal Agencies

For the purposes of the RFA/SBREFA, Federal agencies are not considered small governments. As such, the Service, Navy, USDA, and FEMA are not considered further in this portion of the economic analysis.

5.c.(2) State Agencies

For the purposes of the RFA/SBREFA, State governments are not considered small government jurisdictions. As such, the DLNR and Hawai‘i DOA are not considered further in this portion of the economic analysis.

5.c.(3) County Agencies

The RFA/SBREFA defines "small governmental jurisdiction" as the government of a city, county, town, school district, or special district with a population of less than 50,000. Kaua‘i County has a population greater than 50,000 (see Chapter II of the DEA). As such, county agencies such as the Kaua‘i County Police Department and Board of Water Supply are not considered further in this portion of the economic analysis.

5.c.(4) Non-Profit

The RFA/SBREFA defines “small organization” as any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. While this definition leaves some room for interpretation, TNCH and NTBG are both large organizations that are dominant in Kaua‘i County in their respective fields of conservation/land management and botanical garden management. According to the RFA/SBREFA definitions, TNCH and NTBG are not likely to be considered small organizations.

5.c.(5) Private

Verizon Hawai‘i Inc. is a subsidiary of Verizon Communications Inc., an international communications company. The SBA defines a communications company as small if it has fewer than 1,500 employees. Verizon Communications Inc. currently has 260,000 employees, so it is not a small business (Verizon, 2002).

5.d. Potential Impacts on Small Entities

Based on the analysis above, there are no small entities that may be impacted by the implementation of the Act’s section 7 provisions for the plants. Therefore, the plant critical habitat designation will not have a significant economic impact on a substantial number of small entities.

6. BENEFITS

Chapter VI, section 6 and 7 of the DEA discuss the potential direct and indirect benefits that could result from critical habitat. Specifically, Chapter VI, section 7.d. discusses the economic activity generated by conservation management. As noted above, if mandated by a court order, the annual conservation management costs for critical habitat would be \$1.8 million. These expenditures would generate \$3.8 million per year in direct and indirect sales in Hawai‘i, and would support about 63 direct and indirect jobs in Hawai‘i.

However, the economic activity supported by these expenditures on conservation management may or may not represent an expansion of Hawai‘i’s economy, depending upon how the expenditures are financed (e.g. by new Federal funding sources, or by State funds intended for another purpose). Chapter VI, section 7.d. of the DEA provides further explanation of this issue.

7. PUBLIC COMMENTS

Some reviewers commented that the DEA did not address or did not adequately consider a variety of costs and benefits that they believe could occur due to the implementation of section 7 for the plants. Many of these possible costs were, in fact, considered and some were addressed in the DEA. In many cases, however, potential costs were not addressed in the DEA because they are not expected to occur. In other cases, it is impossible for them to occur. In still other cases, the concerns no longer have substance given the Service’s modifications to the proposed critical habitat.

To clarify further, the following addresses specific comments raised during the public comment period that relate to economic impact of the proposed designation but are not expected to occur and/or have already been addressed by the DEA.

7.a. Comment (Takings)

Several commenters stated the following: The Service did not adequately address the takings of private property as a result of designating critical habitat for endangered plants on Kaua‘i. If the proposed designation of critical habitat precipitates conversion of agricultural lands to conservation land that has no economically beneficial use, then the Federal and State governments will have taken private property.

Response: The possible costs associated with redistricting land are discussed in the DEA under indirect costs. Since the publication of the DEA, the Service has indicated it will remove most of the land in the Agricultural and Urban Districts from the final critical habitat designation. As noted above, redistricting the remaining privately owned parcels to the Conservation District could result in: (1) approximately \$178,500 in lost property values; (2) a small loss of economic activity associated with ranching; and (3) \$500 in increased property taxes.

7.b. Comment (Allocation of Costs)

One commenter said that estimated management costs needed to recover a species should be part of an economic analysis associated with critical habitat designation. Another commenter said that management costs for the recovery of listed species are not appropriate costs to assign to critical habitat designation.

Response: The Act does not obligate landowners to manage their land to protect critical habitat, nor would landowners and managers be obligated under the Act to participate in projects to recover a species for which critical habitat has been established. However, Chapter VI, section 4.d. of the DEA does discuss the potential mandate for conservation management pursuant to litigation and the resulting costs for the proposed designation on Kaua‘i. As noted in Section 4.c. of the

Addendum, the costs of conservation management for critical habitat as will be modified could reach \$1.8 million per year. These costs are not assigned to critical habitat. Instead, they are presented to illustrate the possible costs that could result from a third party lawsuit.

7.c. Comment (RFA/SBREFA)

Several commenters stated the following: The Service fails to adequately analyze the economic impact to small entities under the Regulatory Flexibility Act, and the Small Business Regulatory Enforcement Fairness Act. Given Kaua'i's small population, a large proportion of firms in the agricultural sector may well be affected and could suffer severe impact. In addition, the prospect of indirect costs mounting into the tens of millions of dollars on a small island requires the Service to reconsider its blithe assumption that there will be no significant impact on small businesses. Having mentioned huge potential losses to landowners and the county economy, the DEA fails to carefully consider the sum of the many "indirect" effects of critical habitat designation, ignoring all but direct costs of consultation.

Response: Section 5 of the addendum presents a regulatory flexibility analysis that is consistent with the RFA/SBREFA. Federal courts and Congress have indicated that an RFA/SBREFA analysis is properly limited to all impacts to entities directly subject to the requirements of the regulation (Service, 2002). As such, entities indirectly impacted by the plant listings and critical habitat and, therefore, not directly regulated by the listing or critical habitat designation are not considered in the RFA/SBREFA analysis. Based on the analysis, there are no small entities that may be impacted by the implementation of the Act's section 7 provisions for the plants on Kaua'i. Therefore, the plants critical habitat designation, as will be modified, will not have a significant economic impact on a substantial number of small entities.

7.d. Comment (Federal Nexus)

Several commenters stated the following: While the Service has stated that critical habitat affects only activities that require Federal permits or funding, and does not require landowners to carry out special management or restrict use of their land, this fails to address the breadth of Federal activities that affect private property in Hawai'i and the extent to which private landowners are required to obtain Federal approval before they can use their property. These requirements also extend to State agencies requiring Federal funds or approvals.

Response: The analysis in the DEA, as revised by the Addendum, is based on a review of all projects, activities, land uses that may be directly affected by the implementation of section 7 for the listed plants. The DEA and the Addendum present any reasonably foreseeable Federal involvement (Federal permit, license, or other authorization, or Federal funding) for these projects, activities, and land uses. The results of this analysis are presented in Table ES-1 in the DEA and Table Add-2 in the Addendum.

7.e. Comment (The Act & State Law - General)

Several commenters stated the following: The impact of the proposed designations under State law is potentially more extensive than under Federal law since the Act contains at least general criteria for determining when alteration of critical habitat constitutes "destruction or adverse modification." The lack of analogous provisions under State law lends itself to a much broader interpretation of what activities might be considered injurious to the species (and therefore prohibited). One commenter asked if, to the extent that the Service has considered the potential interplay between the Act and State statutes, whether the Service is aware of any circumstances where similar issues have been raised under other state conservation statutes when critical habitat was designated. Another commenter noted, however, that because Hawai'i's land use laws are uniquely

onerous, precedent from other states is of little value. The current wave of proposals to designate critical habitat are the first time that the Act has been applied to significant areas of private land in Hawai'i. Consequently, even prior experience in Hawai'i is of little relevance.

Response: Possible costs resulting from interplay of Federal Endangered Species Act and Hawai'i State law are already discussed in the DEA under indirect costs (e.g., possible conservation management mandate for the private landowner and reduction in game mammals population). The lack of experience with critical habitat on private land in Hawai'i is reflected in the uncertainty regarding the probabilities that certain indirect costs will occur.

7.f. Comment (Impact of Take Provision under State Law)

Several commenters stated the following: The DEA fails to consider economic impacts of listing and critical habitat that result through interaction with State law, specifically Hawai'i's Endangered Species Act. New Mexico Cattlegrowers Association v. U.S. Fish and Wildlife Service requires consideration of the impact of listing as well as the impact of designating an area as critical habitat. Instead, the analysis is expressly limited to the impact of Federal agency consultation under the jeopardy standard. However, since listing triggers listing under State law, the Service must consider the impact of take prohibitions under State law (and consequently Federal law which prohibits destruction of plants in knowing violation of State law).

Response: The DEA considers the economic impacts of section 7 consultations related to critical habitat even if they are attributable co-extensively to the listed status of the species. In addition, the DEA examines any indirect costs of critical habitat designation such as where critical habitat triggers the applicability of a State or local statute. However, where it is the listing of a species that prompts action at the State or local level (e.g., and indirect cost or benefit), the impacts are not attributable to critical habitat designation and are not appropriately considered in the economic analysis of critical habitat designation. Take prohibitions under Hawai'i law are purely attributable to a listing decision and do not co-extensively occur because of critical habitat designations. There are no take prohibitions associated with critical habitat.

7.g. Comment (State Land Use Law)

Several commenters stated the following: The DEA fails to consider economic impacts of critical habitat that result through interaction with State law, specifically Hawai'i's Land Use Law. Critical habitat could result in downzoning under State law. HRS § 205-2(e) states that conservation districts shall include areas necessary for conserving endangered species. HRS 195D-5.1 states that DLNR shall initiate amendments in order to include the habitat of rare species. Even if DLNR does not act, the Land Use Commission may initiate such changes, or they may be forced by citizen suits. Areas for endangered species are placed in the protected subzone with the most severe restrictions. While existing uses can be grandfathered in, downzoning will prevent landowners from being able to shift uses in the future, reduce market value, and make the land unmortgageable. Although the Service acknowledges that there could be substantial indirect costs relating to redistricting of land to the Conservation District, several commentators disagreed with the characterization of these costs as "minor" and with the statement that the probabilities of redistricting as "slight to small."

Response: As will be modified, the critical habitat affects very little land outside of the Conservation District. As indicated earlier in this Addendum, about 370 acres (less than one percent of the critical habitat as will be modified) of privately owned Agricultural lands and 12 acres (less than one percent of the critical habitat as will be modified) of privately owned Urban lands will be included in critical habitat. Most of the Agricultural land is on Ni'ihau and all of the Urban land is on steep ocean cliffs. As discussed above, one scenario considered is a reduction in land values due to

redistricting land from Agricultural or Urban District to Conservation District could result in a loss of \$178,500 in property values on Ni'ihau along with a small loss in economic activity associated with ranching and a small increase in property taxes. Under this scenario, even if a landowner has no plans to sell the land, the loss in land value could reduce potential mortgage financing.

7.h. Comment (Agriculture on State Land)

One commenter stated the following: The State currently leases some of its lands for agriculture or ranching uses. There is uncertainty whether any endangered plant species exist on these lands, which have historically been used for agricultural and ranching purposes, and have been subject to grazing and cultivation activities. If such species do exist, State law would completely prohibit or substantially restrict the continued use of these lands for agriculture or ranching purposes and would clearly have an adverse impact on the operations of the lessees and lease revenues. The DEA fails to establish that the benefits of including specific leased parcels outweigh the costs.

Response: The only State owned Agricultural land that will remain in critical habitat includes approximately 37 acres in Units H1 and M. The 33 acres in Unit H1 comprise a sliver of land that is *makai* (toward the ocean) of the existing road in the northern portion of the unit and does not include any fields or grazing land. The State does not have any agricultural leases for the four acres of Agricultural land in Unit M. As such, the designation of critical habitat is not anticipated to have adverse effects on agricultural activities on State land.

7.i. Comment (State Environmental Impact Statement (EIS))

Several commenters stated the following: The DEA fails to consider economic impacts of critical habitat that result through interaction with State law, specifically Hawai'i's Environmental Impact Statement Law. HRS 343-5 applies to any use of conservation land, and a full Environmental Impact Statement is required if any of the significance criteria listed in HAR 11-200-12 apply. One of these criteria is that an action is significant if it "substantially affects a rare, threatened or endangered species or its habitat." This will result in costly procedural requirements and delays. However, the DEA does not acknowledge that any impact on endangered species habitat will be deemed to be "significant." In addition, multiple commenters stated that the DEA fails to evaluate the practical effect critical habitat designation will have on development. Special Management Area permits administered by Kaua'i County as required by Hawai'i's Coastal Zone Management Act will be harder to get, will result in delays, will cause a decline in property values and may make it impossible to develop. This economic impact disappears because the DEA's bottom line erroneously counts only so-called "direct" costs of consultation.

Several commenters also stated the following: The Service has taken the position in other states that it has a right to intervene in local land use proceedings if they affect endangered species on private property, as evidenced by the Service's petition to the local zoning board in Arizona to postpone approval of a rezoning petition pending a survey to determine the extent to which an endangered plant was present on the property even though no Federal approval was being sought. That the Service does not address these activities in the DEA is a fundamental error of the analysis.

Response: Chapter VI, Section 4.f.(2) of the DEA discusses State and county environmental review, with an emphasis on Hawai'i's Environmental Impact Statement Law. This section indicates that if a project is required to do an Environmental Assessment (EA) and is located in critical habitat, a more expensive EIS may have to be prepared. The estimated increase in costs to prepare an EIS is \$25,000 to \$75,000 per project. As noted above, there is one project that may require an EA and is located in critical habitat, as will be modified. As such, the additional environmental review cost potentially attributable to critical habitat is \$25,000 to \$75,000.

However, there are no planned *urban development* projects that will require State and county development approvals and are located in critical habitat, as will be modified. The following factors make future development projects in the proposed critical habitat highly unlikely: (1) as will be modified, 99 percent of the proposed critical habitat is in Conservation District where development is severely limited; (2) almost all of the remaining Agricultural land will be on Ni‘ihau in an area not subject to development pressure; and (3) all of the land in the Urban District is on steep ocean cliffs that can not support development. Thus, the probability that the Service will intervene in State and county development approvals is regarded as negligible because there is no urban development planned and almost no development potential in critical habitat.

7.j. Comment (Existing Water Diversions)

Several commenters stated the following: The DEA fails to consider economic impacts of critical habitat that result through interaction with State law, specifically the State Water Code. HRS 174C-2 states that “adequate provision shall be made for protection of fish and wildlife. HRS 174C-71 instructs the Commission of Water Resource Management to establish an instream use protection program to protect fish and wildlife. Since landowners may depend on water pumped from other watersheds, these effects can be far-reaching. It is impossible to tell from the descriptions in the proposal whether any water diversions will have to be reduced as a result of listing and critical habitat designation. It is unfair to dismiss costly but vital sources of energy and inexpensive irrigation water while maintaining the highest level of effort to protect primary constituent element for species that do not physically reside in the area but may somehow be transported. If the critical habitat proposal would require reducing water diversions from any stream, the Service should investigate whether that would take anyone’s vested water rights. The Service has an obligation to thoroughly investigate this issue and refrain from designating critical habitat until it has determined whether its actions will affect water use. Water sources and irrigation ditches that are part of the former Kekaha irrigation system for the former Kekaha Sugar Plantation should be removed from designation. At minimum, portions of specific parcels that include water sources or water systems should be removed.

Response: No costs are expected to occur from such impacts to water systems, because none of the listed plants are stream-dependent for their survival and therefore would not cause a reduction in water diversion. In addition, water infrastructure, including the Kekaha irrigation system, is considered a manmade feature and therefore would not be included in critical habitat pursuant to the proposed rule, because these features and structures normally do not contain, and are not likely to develop, any *primary constituent elements*. Thus, unless its operation and maintenance would indirectly affect critical habitat, which is not anticipated, it should not be affected by section 7 of the Act. (See comment 7.m. for a discussion of the impacts of the proposed designation on potential new water diversions and improvements.)

7.k. Comment (Water Use/Hydropower)

Several commenters stated the following: The irrigation system stemming from the North Fork diversion of the Wailua River and the hydropower plant located in Wainiha Valley are necessary for the continued viability and possible expansion of agricultural activities on Kaua‘i. Continued operation of the systems require registration permits from the State and, depending on the nature of the maintenance, may require Army Corps of Engineers (COE) permits. These uses should not be burdened with the threat of potential Federal or civil action prohibiting or delaying their continued or expanded use. Furthermore, any additional requirement brought about by a critical habitat designation would be borne by the system’s end users. Similarly, restoration of the taro fields in Haena State Park would require a COE permit. The designation of this area as critical habitat would make it unlikely that this permit would be approved, thus frustrating the efforts and development of the park. Additional analysis of costs associated with hydropower development is warranted. Such

analysis would indicate that agricultural lands and hydropower development should be excluded from designation of critical habitat because benefits of exclusion would far outweigh the benefits of designation and the exclusion would not result in the extinction of the species.

Response: The irrigation system stemming from the North Fork diversion of the Wailua River, the diversion and hydropower plant located in Wainiha Valley, the taro fields in Haena State Park, and the portions of the ditches and streams downstream from these water systems/improvements will be removed from the critical habitat as will be modified. In addition, as noted in responses to other comments, none of the listed plants are stream-dependent for their survival and therefore would not cause a reduction in water diversion. Thus, no costs are expected from continued operation of these water systems due to critical habitat.

Chapter VI, section 3.i. of the DEA discusses the potential for additional hydropower development in the areas proposed as critical habitat. Since the publication of the DEA, information regarding a potential hydropower diversion and powerhouse in the upper Wainiha Valley was made available. This hydropower plant was proposed in the 1980's, but due to the landowner's capital limitations at the time, it was not constructed. There are no current plans to develop this project, but the potential for future development adds to the land value of the Upper Wainiha Valley. However, the Service indicates that the area planned for the diversion, powerhouse, and other project elements will be excluded from critical habitat. As such, no costs associated with future hydropower development potential are anticipated due to critical habitat.

7.1. Comment (Hydropower)

One commenter stated the following: In discussing possible future hydropower facilities, the DEA appears to contradict itself by saying that in May 2001 a company filed an application with the Federal Energy Regulation Commission for a preliminary permit and then saying it is "highly unlikely" that any additional hydro plants will be built. If critical habitat designations make it all but impossible to build a new hydropower facility, which seems to be the implication of the DEA, then the designations contradict the State and national policies of promoting energy independence.

Response: Chapter VI, Section 3.i. of the DEA does mention that in May 2001, a company filed an application with the Federal Energy Regulatory Commission (FERC) to build a dam on the lower Wailua River and that the area affected by this project is outside of critical habitat. The DEA also states that "it is highly unlikely that additional plants will be built in the next 10 years *in areas that could impact the proposed critical habitat.*" This statement is supported by studies performed by the State Department of Business, Economic Development, and Tourism (DBEDT) of the areas in critical habitat, and current plans of those who own land in critical habitat. In addition, the planned generating capacity on Kaua'i is sufficient to supply projected demand over the 10-year period of the analysis. Since the proposed critical habitat covers only a portion of the island of Kaua'i, these two statements are not contradictory.

Furthermore, development of a new hydropower plant would still be possible even if the hydropower plant was located upstream or within critical habitat. If the project had Federal involvement, and the Federal action agency determined the project may affect critical habitat or listed species, the Federal action agency would enter into section 7 consultation with the Service. During the section 7 consultation process, the Service, Federal Action agency, and the applicant would develop project modifications to reduce the adverse effects of the project on listed species and critical habitat. A section 7 consultation rarely results in a project being canceled. The section 7 consultation process is described in detail in Chapter III of the DEA.

7.m. Comment (New Water Diversions)

One commenter stated the following: On Maui, there is an administrative contested case proceeding pending before the Board of Land and Natural Resources that involves the diversion of millions of gallons of water. Any diversion in or upstream of critical habitat will be challenged by people who oppose all diversions on principle. They will contend that diverting water from endangered plants risk driving them to extinction. Opponents of diversions could use the critical habitat designations to invent a colorable argument sufficient to delay and confuse water use decisions.

Response: Chapter VI, section 3.j.(2). of the DEA states that it is highly unlikely that a new ditch system or major expansion to an existing one (including new diversions) would be proposed or approved in the proposed critical habitat. This assessment is based on the fact that there is little need for new diversions because anticipated future demand for irrigation water will be met by the existing supply. In addition, environmental concerns and likely public opposition to stream diversions will cause difficulties in obtaining permits for new ditch systems or diversions.

7.n. Comment (Under-estimation of Costs)

Two commenters stated the following: The estimated total costs of designating critical habitat are deceptively low because they exclude costs that "are difficult to estimate." However, the costs of conservation management are quantifiable and examples of cost per acre are available from watershed management projects around the State. There is no reason why these costs should be ignored in the DEA. If included, these costs will certainly outweigh the benefits of designation. The DEA also underestimates the economic costs because they are limited to what is likely to occur within 10 years even though critical habitat designation is permanent and not automatically revised if there is new evidence of the benefits of non-designation, or if the species is delisted.

Response: As noted above, the illustrative cost of conservation management of the entire critical habitat as will be modified is \$1.8 million per year. However, as mentioned in the DEA and in the Addendum, there is no existing obligation to proactively manage lands in critical habitat to control threats, but there is a undetermined probability that a State or Federal court could mandate conservation management.

As indicated in Chapter V of the DEA, many landowners and managers do not have specific plans for projects beyond 10 years, and forecasts of future economic activity are based on current socio-economic trends and the current level of technology, both of which are likely to change over the long term. However, information available in documents with planning horizons that are longer than 10 years such as the Kaua'i Planning Department's *Kaua'i General Plan* (2002), and the State Department of Transportation *Kaua'i Long Range Land Transportation Plan* (1997) were considered in the preparation of the DEA and the Addendum.

A listed species may be delisted when it is recovered or has become extinct. When a species is delisted, its critical habitat would also be "undesigned."

7.o. Comment (\$100 Million Threshold)

One commenter stated the following: The conclusion under E.O. 12866 that the rule will not have an annual economic effect of \$100 million or more, or adversely affect in a material way any sector of the economy or State or local governments or communities, is flawed because it does not consider the major adverse impacts from secondary effects.

Response: For the reasons explained in the DEA, the rule is not expected to have an annual economic effect of \$100 million or more. As indicated in Table Add-2, the annualized direct costs of the implementation of section 7 for the listed plants ranges from approximately \$17,000 to \$52,000. While the probability that many of the indirect effects will occur is low or unknown, the total worst case scenario for the indirect costs of critical habitat, as will be modified, includes (1) \$513,000 in direct and indirect annual sales from the loss of economic activity associated with hunting (however, the decrease in expenditures by the displaced hunters would probably be spent on other recreational activities, goods and services, so this figure is likely to overstate the economic costs); (2) \$149,000 per year in the loss of hunter benefits (however, as above, some of this loss will be offset by benefits derived from alternative recreational activity); (3) \$1.8 million in annual conservation management costs (some of which may be in the form of new Federal funds to Hawai'i and thus represent an increase the regional economy instead of a loss); (4) approximately \$178,500 in lost property values; (5) a small loss of economic activity associated with ranching; (6) \$500 in increased property taxes; (7) \$25,000 to \$75,000 in the additional cost to prepare an EIS; and (8) \$53,000 to \$169,000 in the costs to investigate the implications of critical habitat. Annualized, these indirect costs amount to \$2.49 million to \$2.51 million per year. The sum of the direct and indirect costs, annually, ranges from \$2.51 million to \$2.56 million, significantly less than the \$100 million level of significance.

7.p. Comment (Cost of Management Compliance)

Several commenters stated the following: Critical habitat designation could indirectly result in limitations or special management requirements, such as fencing or control of invasive species, being established on private lands. These requirements could result in considerable cost to both the State and private landowners. The DEA estimates that the *Palila* case may be interpreted to mandate private conservation and could cost Kaua'i landowners \$3 million or more per year. These costs should be considered.

Response: The Act does not obligate landowners to manage their land to protect critical habitat, nor would landowners and managers be obligated under the Act to participate in projects to recover a species for which critical habitat has been established. However, the DEA and the Addendum discuss the potential mandate for conservation management pursuant to litigation and the resulting costs for the proposed designation on Kaua'i. The cost of conservation management for the critical habitat as will be modified could be \$1.8 million per year. However, there is an undetermined probability that this impact will occur.

Section 4(a)(3)(A) of the Act directs the Secretary to designation critical habitat to the "maximum extent prudent and determinable." Critical habitat is not prudent when one or both of the following situations exist: (1) a species is threatened by taking or other human activity and identification of critical habitat would increase the degree of threat; or (2) designation would not be beneficial to the species (50 CFR § 424.12(a)(1)). Thus, the costs of the designation are not considered in analyzing whether critical habitat is prudent. However, such costs *are* considered under section 4(b)(2) of the Act, which directs the Secretary to take into consideration the economic and other impacts of designation and authorizes the Secretary to exclude any area if she determines that the benefits of exclusion outweigh the benefits of designating it as critical habitat, unless it will result in the extinction of the species. The final rule explains the Service's section 4(b)(2) analysis.

7.q. Comment (Potential Litigation)

Several commenters stated the following: The cost of potential citizen suits preventing certain activities or requiring some sort of management in critical habitat was not discussed in the DEA. Litigation regarding land management requirements is not only foreseeable, but likely. The proposals

will give the government and the environmental groups a legal excuse to attack and severely damage anyone who grows endangered Hawaiian plants, and also anyone whose land is listed as critical habitat. Human freedom and constitutional principles are far more important than biologically incompetent plants. Critical habitat designation will bring unnecessary and costly litigation, thus creating an economic disaster that would severely challenge one private landowner's economic viability. These official listings will also give the government and the environmental groups a legal excuse to meddle destructively in the affairs of Ni'ihau.

Response: As discussed in the DEA and in the Addendum, an undetermined probability exists that a Federal or State court could mandate certain indirect impacts as a result of critical habitat. However, it is beyond the scope of the economic analysis to assess the legal merits of the arguments for or against the various indirect impacts, the probability that a lawsuit will be filed, and, if filed, to identify possible outcomes of a court decision and the associated probabilities and costs. However, whenever possible, the DEA and the Addendum present the worst-case scenario of the costs associated with the potential outcomes of third party lawsuits.

7.r. Comment (Lost Development Potential on Private Land)

One commenter stated the following: A strip of Grove Farm-owned land along the coastline from the Poipu Bay Golf Course to Kawelikoa Point is being proposed for critical habitat. Although much of this land is within the Conservation District and development, if any, is expected to be minimal, critical habitat designations may affect current activities that exist in this area, as well as possible future activities, such as, hiking, kayaking or horseback riding. The Poipu Maha'ulepu property also has future potential as a quality resort development, with potential construction valued in the hundreds of millions of dollars and employment and housing for over a thousand residents.

Response: Activities such as hiking, kayaking, and horseback riding that are limited to existing trails are not identified as activities that may directly or indirectly adversely affect critical habitat. As such, any additional environmental review or modification to these activities directly or indirectly attributable to critical habitat is anticipated to be negligible. In addition, the Service indicates that the planned site for the Poipu Maha'ulepu resort will be excluded from critical habitat.

7.s. Comment (Lost Development Potential on Public Land)

One commenter stated the following: The U.S. Navy currently has 14 beach cottages and an officers beach facility within its Pacific Missile Range Facility (PMRF). Funding has been appropriated to add six cottages and future plans provide for additional cottages to follow. Completed documents also identify construction plans for other new facilities and structures on PMRF. The economic analysis does not adequately consider such future costs.

Response: The Service indicates the planned site for beach cottages at PMRF will be excluded from critical habitat. The potential costs associated with other planned construction at PMRF are discussed in Chapter VI, section 3.m. of the DEA and in section 3.b. of the Addendum.

7.t. Comment (Existing Structures)

One commenter stated the following: Portions of the proposed critical habitat designations are within the Conservation District. Although there are no intense activities occurring on these lands, roadway and water systems traverse some of these lands. Critical habitat designations may affect operations and maintenance of these systems as well as any future change in use of the lands.

Response: As mentioned in the proposed rule and in Chapter I of the DEA, existing man-made features and structures do not contain, and are not likely to develop, primary constituent

elements essential for the conservation of the listed species. These features and structures are considered “unmapped holes” that are found within the boundaries of critical habitat units but are not considered by the Service to be part of critical habitat. As such, there are unlikely to be any direct section 7 related costs to the operation and maintenance (O&M) of existing features and structures.

The DEA and the Addendum present reasonably foreseeable projects, land uses, and activities that could occur within critical habitat over the next ten years. While there may be some unknown future change in the use of the land in the Conservation District in critical habitat, there is insufficient information to assess the potential indirect or direct effects critical habitat will have on the land use. However, any change in land use would be limited by the protections provided by the Conservation District and other baseline regulations discussed in Chapter IV of the DEA.

7.u. Comment (Kaua‘i Economy - General)

Several commenters stated the following: Kaua‘i's economy is far from robust and serious consideration must be given to the economic consequences of designating critical habitat. The total designation of 99,206 acres on Kaua‘i and 697 acres on Ni‘ihau encompass approximately one-fourth of the total land area of Kaua‘i County and is of grave concern.

Response: Critical habitat, as will be modified, includes roughly 15 percent of the island of Kaua‘i and less than one percent of the island of Ni‘ihau. The economic costs to the economy of Kaua‘i County (which includes both Kaua‘i and Ni‘ihau) are expected to be small because (1) as will be modified, 99 percent of the proposed critical habitat will be in Conservation District where development and other economic activity is severely limited; (2) almost all of the remaining Agricultural land will be on Ni‘ihau in an area not subject to development pressure; and (3) all of the land in the Urban District is on steep ocean cliffs that can not support development.

7.v. Comment (Public Hunting)

Several commenters stated the following: All Hawaiian plant recovery plans call for fencing to keep feral animals away from the plants. Yet the Service has stated that the 99,000 acres being designated as critical habitat on Kaua‘i will have no impact on the hunters. Clarification of this statement is needed. Critical habitat designation will greatly impact the public hunting program and deprive hunters access to lands they have used for generations for recreation as well as food supplement for their families. This loss is of further significance, given Kaua‘i's hard-pressed economy and the recent closures of Amfac and Kekaha Sugar plantations. The State could also lose much needed revenues to continue its game and area management services as sales of hunting licenses would decrease.

Response: Chapter VI, sections 3.a. and 4.b. of the DEA and section 4.a. of the Addendum discuss the potential effects the implementation of section 7 for the listed plants will likely have on hunting, as well as the potential indirect effect critical habitat could have on hunting. The direct effects include costs ranging from \$9,000 to \$17,600 for two section 7 consultation between the Service and DLNR and costs ranging from \$50,000 to \$100,000 for project modifications associated with State game management activities. The indirect effects include a slight probability of a change in State game management policy and an undetermined probability of a successful third party lawsuit to mandate conservation management of State and private lands, which could include fencing to exclude feral ungulates. The potential drop in hunting activity translates into a decrease in annual economic activity related to hunting on Kaua‘i of about \$297,000 in direct sales (a figure that includes expenditures on hunting licenses); \$513,000 in total direct and indirect sales; nine jobs; and \$176,000 in income, as well as a loss of \$149,000 in hunter benefits. However, the decrease in expenditures and hunter benefits would largely be off-set by expenditures and benefits associated with

other recreational activities, so these figures overstate the economic costs. If the critical habitat, as will be modified, is fenced to exclude ungulates, the annual cost of conservation management for the listed plants would be approximately \$1.8 million.

7.w. Comment (Military Use)

Several commenters stated the following: Critical habitat will absolutely not save any endangered species but has the potential to seriously disrupt national defense work conducted there. The U.S. Navy's Pacific Missile Range Facility's (PMRF's) physical assets provide an exceptional platform for military training that cannot be found elsewhere within the United States. Hindering PMRF's ability to perform its mission due to limitations arising from the existence of critical habitat would not only have an immediate impact on the military readiness of the nation, it would be extraordinarily costly and wasteful, and significantly impact the community of Kaua'i. The benefits of excluding the area outweigh the benefits of specifying these areas as part of critical habitat.

Response: These potential direct and indirect costs to PMRF are discussed in detail in Chapter VI, sections 3.m. and 4.c. of the DEA and in sections 3.b. and 4.b. of the Addendum.

7.x. Comment (Ni'ihau)

One commenter stated the following: It is not prudent to designate critical habitat on Ni'ihau as it may serve to restrict Federal actions that promote the readiness of our nation's fighting forces. The operations most likely to be impacted would be the Special Warfare and the downed pilot recovery training exercised by the U.S. Marine Corps and U.S. Navy. Disruption of these activities may also result in negative economic impact to Ni'ihau residents.

Response: The potential project modifications as a result of the implementation of section 7 for the plants on military activities on Ni'ihau are discussed in Chapter VI, section 3.m. of the DEA. These project modifications include placing stakes in the ground to mark the boundaries of the areas which should be avoided. The Navy may also give maps to military personnel before they are deployed to delineate these areas. The total cost of these project modifications is estimated at \$6,000. Given that the critical habitat will covers less than one percent of Ni'ihau, and the military uses much of the island for Special Warfare and the downed pilot recovery training, the avoidance of the areas in critical habitat is not anticipated to have an effect on the readiness of our nation's fighting forces or Ni'ihau residents.

7.y. Comment (Benefit Analysis)

One commenter stated the DEA lacks a thorough benefits analysis. Multiple commenters stated that the DEA ignored the benefit of keeping other native species off the endangered species list, of maintaining water quality and quantity, of promoting ground water recharge, and of preventing siltation of the marine environment, thus protecting coral reefs. Another commenter noted that additional benefits of critical habitat include combating global warming, providing recreational opportunities, attracting ecotourism, and preserving Hawai'i's natural heritage. Although the DEA makes general observations of the benefits associated with designating critical habitat, it makes no attempt to quantify these acknowledged benefits. The Service must use the tools available, such as a University of Hawai'i Secretariat for Conservation Biology study that estimated the value of ecosystem services, to determine the benefits of critical habitat. On the other hand, one commenter stated that the DEA overestimates economic benefits and many of the alleged benefits are entirely speculative, unquantifiable or lack any commercial value. In addition, treating "better siting of projects by developers so as to avoid costly project delays," as an economic benefit is circular. The costly project delays result from regulations. They could be avoided by not imposing the regulations in the first place.

Response: Chapter VI, Sections 6 and 7 of the DEA discusses the potential benefits addressed in the above comments. However, the DEA also indicates that these benefits are not quantified due to lack of information on the value of the environmental benefits that would be attributable specifically to the critical habitat designations (i.e. the benefits over and above those which will occur due to other existing protections, and over and above the benefits from other conservation projects). In other words, there is a lack of (1) scientific studies regarding ecosystem changes due to critical habitat, and (2) economic studies on the per-unit value of the changes.

The 1999 analysis by University of Hawai'i (UH) economists on the total value of environmental services provided by O'ahu's Ko'olau Mountains was used in the DEA as a resource document for concepts, and for identifying documents that report the original research on certain subjects.

However, the UH study has limited applicability for valuing the benefits of plants critical habitat designation for a number of reasons. First, the UH study had a different purpose which was to estimate the total value of environmental benefits provided by the entire Ko'olau Mountains on the island of O'ahu versus the value of the more limited benefits provided by the proposed plants critical habitat on the island of Kaua'i. Consistent with its purpose, the UH study provides no estimates of the changes in environmental conditions resulting from changes in land management due to critical habitat designations.

Furthermore, many of the assumptions and much of the analysis in the UH study are not transferable to the economic analysis for the plants critical habitat. For example, the value of water recharge in the UH study reflects projected water supply and demand conditions on O'ahu—an island which is nine percent larger than Kaua'i but has a population of more than 12 times that of Kaua'i. Also, the UH benefit analysis of reducing soil runoff is unique to three valleys that drain through partially channelized streams in urban areas into the man-made Ala Wai Canal. Since this canal was designed with inadequate flushing from stream or ocean currents, it functions as an unintended settling basin so must be dredged periodically. In addition, the recreational and ecotourism values provided in the UH study apply to areas that are accessible to most hikers, which is not the case with most of the Kaua'i plants critical habitat. As mentioned in the DEA, most of the plants critical habitat units are located in the mountainous interior of Kaua'i. Much of the proposed critical habitat has steep slopes, remote locations, and difficult access; some of the units are accessible only by helicopter and are rarely visited.

Chapter VI, section 6.c. of the DEA discusses a potential benefit of critical habitat to developers. By knowing the critical habitat boundaries, developers can site projects outside the boundaries, thereby avoiding certain issues related to threatened and endangered species. This benefit only applies to the critical habitat occupied by listed species. As such, the benefit is not circular, because, as a result of critical habitat, developers can avoid take issues associated with Hawai'i State law and the other baseline regulations protecting listed species discussed in Chapter IV of the DEA.

7.z. Comment (Existence Value)

Several commenters stated the following: Existence values should be quantified. Studies referenced in the analysis contain information about how much people would be willing to pay to save various species. Even assuming plants are non-charismatic and therefore would justify lower values, there would still be a value of \$6 per household per year. If the study is able to take values for a day of hunting from the State of Idaho and apply them to Hawai'i, it should be equally able to take values

from studies which have looked at other species to get some sense of what people would pay to make sure these species recover and do not go extinct.

Response: When primary research on benefits is not feasible, economists frequently rely on the method of benefits transfer. Benefits transfer involves application of results of existing valuation studies to a new policy question.⁵ Two core principals of defensible benefits transfer are (1) the use of studies that apply acceptable techniques to generate welfare values, and (2) similarity between the good being valued in the literature and the good being valued in the policy context to which the transfer is being made (i.e., the protection afforded the plants by critical habitat). No known studies exist on the existence value of similar or comparable plants. Therefore, applying results of existing valuation studies on non-plants to the Kaua'i plants is not feasible.

7.aa. Comment (Cooperation & Partnerships)

Several commenters stated the following: Active management by private landowners would be more beneficial than critical habitat designations because private landowners can carry out conservation actions that might otherwise not happen. The proposal fails to properly consider the importance of cooperation and goodwill between the Service and private landowners, and the impact critical habitat designations will have in discouraging voluntary partnerships on private lands.

Response: Chapter VI, section 4.j. of the DEA discusses the potential for reduced cooperation on conservation projects as a result of critical habitat. The DEA determines that a modest but undetermined reduction in cooperation may occur, along with a corresponding but undetermined environmental loss to society.

8. SUMMARY OF ECONOMIC IMPACTS

Table ES-1 of the DEA, which is duplicated as Table VI-4 in Chapter VI, presents the costs and benefits attributable to the listing of the Plants and their proposed critical habitat. Table Add-2 in this Addendum presents revised costs and benefits based on issues raised in public comments on the DEA, new information obtained since the DEA was published, and the areas Service has indicated will be removed in the final rule. Table Add-2 also compares the DEA costs with the revised costs, and provides explanations as needed.

Table Add-2 shows that direct costs associated with ranching operation and military activities are reduced. These changes are based on the Service's indication that it will remove or reduce some of the units due to biological reasons. These changes will cause a reduction in the total direct costs from approximately \$980,000 to \$2.4 million, to \$170,000 to \$520,000. Table Add-2 also presents the average annual direct costs.

In general, the probabilities of the indirect costs remain the same as presented in the DEA, but the magnitude of certain possible impacts are reduced due to the areas the Service indicates will be removed from the final critical habitat designation. However, there is no change in the indirect costs associated with condemnation of property, investigating the implications of critical habitat, and reduced cooperation on conservation projects. Similarly, there is little change in the direct and indirect benefits except that the benefit of the economic activity from conservation management is modified to reflect the acreage the Service indicates will be removed for biological reasons.

⁵ For more discussion of benefits transfer, see Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, September 2000.

Table Add-2. Revised Section 7 Costs and Benefits Attributable to the Plant Listings and Critical Habitat
(10-year estimates)

CH = critical habitat PMs = project modifications O&M = operation and maintenance Fed = Federal ne = not estimated

Item	DEA		Addendum		Explanation of Change from DEA
	Low	High	Low	High	
DIRECT SECTION 7 COSTS					
Existing Man-Made Features, Consultations	None	None	None	None	No change
Management of Game Hunting					
State-Managed Lands, Consultations	\$ 9,000	\$ 17,600	\$ 9,000	\$ 17,600	No change
State-Managed Lands, PMs	\$ 50,000	\$ 100,000	\$ 50,000	\$ 100,000	No change
Private Lands, Consultations	None	None	None	None	No change
State Park, Consultations	None	None	None	None	No change
Botanical Gardens and Arboreta					
National Tropical Botanical Garden, Consultations on Expansion	\$ 10,400	\$ 10,400	\$ 10,400	\$ 10,400	No change
Makaha Arboretum, Consultations	None	None	None	None	No change
Conservation Projects					
The Nature Conservancy of Hawai'i, Consultations	\$ 10,400	\$ 10,400	\$ 10,400	\$ 10,400	No change
Watershed Partnership, Consultations	\$ 16,600	\$ 45,500	\$ 16,600	\$ 45,500	No change
Ranching Operations					
Kipu Kai Ranch, Consultations	\$ 8,700	\$ 16,400	None	None	Kipu Kai Ranch lands will be removed from CH for biological reasons
Communications Facilities					
New Facilities, Consultations	\$ 9,100	\$ 41,600	\$ 9,100	\$ 41,600	No change
New Facilities, PMs	\$ -	\$ 200,000	\$ -	\$ 200,000	No change
Navigational Aids, Consultations	None	None	None	None	No change
Power Transmission Lines, Consultations	None	None	None	None	No change
Hydropower Development, Consultations	None	None	None	None	No change

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(10-year estimates)

CH = critical habitat PMs = project modifications O&M = operation and maintenance Fed = Federal ne = not estimated

Item	DEA		Addendum		Explanation of Change from DEA
	Low	High	Low	High	
Water Systems					
Major Repairs & Improvements, Consultations	\$ 16,600	\$ 27,100	\$ 16,600	\$ 27,100	No change
Major Repairs & Improvements, PMs	Minor	Minor	Minor	Minor	No change
Roads	None	None	None	None	No change
Resort/Residential Development					
Development within Urban District	None	None	None	None	No change
Development within Agricultural District	None	None	None	None	No change
U.S. Military Activities					
Pacific Missile Range Facility, Consultations	\$ 46,300	\$ 64,700	\$ 46,300	\$ 64,700	No change
Pacific Missile Range Facility, PMs	\$ 797,000	\$ 1,902,000	Minor	Minor	Portions of Pacific Missile Range Facility will be removed from critical habitat for biological reasons
Ecotourism, Consultations	None	None	None	None	No change
Natural Disasters					
Recovery Projects, Consultations	\$ 3,800	\$ 7,500	\$ 3,800	\$ 7,500	No change
Recovery Projects, PMs	Minor	Minor	Minor	Minor	No change
TOTAL DIRECT COSTS					
Direct	\$ 977,900	\$ 2,443,200	\$ 172,200	\$ 524,800	Totals may understate economic impact because the cost of "minor" project modifications are not included
Discounted Present Value	\$ 686,836	\$ 1,716,001	\$ 120,946	\$ 368,598	Present value and annualized calculations are based on the OMB prescribed seven percent discount rate and the assumption that total costs are distributed evenly over the entire period of analysis.
Annualized	\$ 97,790	\$ 244,320	\$ 17,220	\$ 52,480	

Table Add-2. Revised Section 7 Costs and Benefits Attributable to the Plant Listings and Critical Habitat
(10-year estimates)

CH = critical habitat PMs = project modifications O&M = operation and maintenance Fed = Federal ne = not estimated

Item	DEA	Explanation of Change from DEA
INDIRECT COSTS		
Management of Game Mammals and Loss of Hunting Lands	Slight probability of a major impact.	Same probability, smaller impact
U.S. Military Activities	Undetermined risk to programs.	Risk to certain training programs (delete: reduced; add: eliminated)
Conservation Management	No obligation to proactively manage lands to control threats, but an undetermined probability of a major impact.	Same obligation and probability, but impact modified to reflect critical habitat as addressed in the Addendum
Redistricting of Land by the State	Small probability of significant impacts.	Same probability, significantly smaller
State and County Development Approvals	Potential loss of profits in excess of \$10 million.	Potential additional costs of \$25,000 to \$75,000 to prepare an EIS for one project
Reduced Property Values	One property could decrease in value by a few million dollars.	One property could decrease in value by approximately \$180,000
Condemnation of Property	No condemnation resulting from CH. Also, the Service acquires land by negotiation, not condemnation.	No change
Investigate Implications of CH	26 private landowners may investigate the implications of CH on their lands.	No change
Reduced Cooperation on Conservation Projects	Some landowners want to avoid CH designation.	No change
DIRECT SECTION 7 BENEFITS		
Benefits of Project Modifications	Difficult to estimate ecological effects of PMs and their value.	No change
Benefits to Developers	Helps developers site projects.	No change
Ecotourism	The Service prefers that guides do not feature visits to threatened & endangered plants.	No change
INDIRECT BENEFITS		
Species Preservation	Difficult to estimate benefits of preservation and its value.	No change
Ethnobotanical Benefits	Difficult to estimate ethnobotanical benefits and their value.	No change
Benefits to the Ecosystem	Difficult to estimate benefits of ecosystems and their value.	No change
Economic Activity from Conservation Management	Potential for small increase.	Increase modified to reflect critical habitat as addressed in the Addendum

REFERENCES⁶

Decision Analysts Hawaii, Inc. and Research Solutions LLC. "Draft Economic Analysis of Proposed Critical Habitat Designations for Threatened and Endangered Plants on Kaua'i and Ni'ihau Hawai'i, Revised Determination." U.S. Department of the Interior, Fish and Wildlife Service. April 2002.

U.S. Department of the Interior, Fish and Wildlife Service. *Kaua'i Plant Critical Habitat*. Unpublished maps of pre-final critical habitat. September 20, 2002.

U.S. Department of the Interior, Fish and Wildlife Service. *Ni'ihau Plant Critical Habitat*. Unpublished maps of pre-final critical habitat. September 20, 2002.

U.S. Department of the Interior, Fish and Wildlife Service. Memorandum to the Washington Office from the Honolulu Field Office re: Kaua'i Plants Critical Habitat Boundary Modifications and Addendum to the Draft Economic Analysis. November 6, 2002.

U.S. Environmental Protection Agency. *Guidelines for Preparing Economic Analyses*. EPA 240-R-00-003. September 2000.

Verizon Communications, Inc. Frequently Asked Questions. Accessed on September 25, 2002 at <http://www22.verizon.com/about/careers/faq.html>

Information was provided in communications with representatives of:

— U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office

⁶ Certain references listed in the references section of the DEA were also used in the preparation of the Addendum.